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Original Research

Evaluating the impact of introducing Physician Associates to cancer units of urology, breast surgery and colorectal surgery – Experiences from the Wessex Cancer Alliance, UK



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Abstract

Background: The National Health Service (NHS) faces a crisis in managing cancer patients in a timely manner. One proposed solution to this problem is through workforce expansion and diversification of professionals capable of treating patients. Physician Associates (PAs) are a relatively recent addition to the multidisciplinary team (MDT) who could be valuable in addressing this crisis.

Objective: We determine the impact of six PAs following their introduction to the diagnostic pathways within urology, and breast and colorectal surgery over the course of their first year.

Methods: The design of the study was qualitative in nature. The development of the PAs was monitored and assessed using review meetings, PA work logs and questionnaires completed by the MDT.

Results: Results showed that within a relatively short time PAs undertook routine, mid-level specialist procedures, aided clinical service provision and engaged in tasks aimed to develop and improve services. PAs developed within

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a clearly assigned area of responsibility with adequate supervision enabling senior doctors to concentrate on more complex duties.

Conclusion: This study concludes that PAs can effectively and sustainably support cancer teams, following initial investment into their training under adequate senior supervision. We show that even PAs with limited previous experience in the respective specialty positively impacted teams as early as six months into their appointment.

Keywords

Physician Associate; cancer; two-week-wait; urology; breast surgery

Background

Cancer Services are under pressure nationally to deliver services in a timely manner evidenced by an annual 10% increase in two-week-wait (2WW) referrals and associated cancer waiting times (Round et al., 2021). Contributing stressors include demographic change, the NHS workforce crisis and, more recently, the backlog caused by the COVID pandemic (Fox et al., 2022).

The drive for early detection and cancer prevention and the need for more complex post-diagnostic cancer treatments seek to improve patient care in the future, whilst adding pressures on the pathways providing cancer care (Couch et al., 2014).

Initiatives, such as Open Access Schemes are designed to reduce consultation times by scrapping clinic appointments that evidently do not benefit the patient to battle the shortcomings. However, they are insufficient to prevent the need for expansion and diversification of the workforce (de Ligt et al., 2019).

PAs are a relatively new addition to the multidisciplinary team. Practicing as part of the medical workforce in North America under the title of 'Physician Assistant' since the 1960s, PAs were first introduced in the UK in 2003. PAs are trained at postgraduate level as medical generalists who work under the supervision of and alongside medical doctors (Oliver, 2023; Roberts et al., 2022).

Training involves a broad general medical education guided by an agreed core competency framework and over 1400 hours of clinical placements across primary and secondary care. Like medical doctors and unlike advanced nurse practitioners, PAs are not required to have had previous roles in the primary or secondary care setting; hence the need for adequate supervision by a support team and a named supervisor, particularly at the beginning of their careers (Royal College of Physicians [RCP], 2023).

Studies have shown that PAs are safe practitioners (Chenevert & Bascombe, 2021; Halter et al., 2020). In secondary care their work remit overlaps with that of



other healthcare professionals, including advanced nurse and clinical practitioners and doctors in training roles (Halter et al., 2020). In the longer term, organisations benefit from PAs as a permanent, non-rotating body of staff often, with time, the number of PAs within a team or department grows.

At present the PA workforce in the UK is expanding with around 4000 PAs working in primary and secondary care (personal communication with the Faculty of Physician Associates, 10/2023). Plans are in place to increase the workforce by 10,000 PAs by 2036/7 (GOV.UK, 2023).

Here we report the introduction of the first six PAs to cancer services in the Wessex Cancer Alliance (WCA) catchment. The choice to promote Physician Associates was based on reports of PAs relieving pressures on cancer teams elsewhere and in view of the fact that PAs were not part of the workforce in hospitals in Wessex at the time. In this study, we specifically examined the profession for utilisation in the 2WW diagnostic pathways in cancer departments of urology, and breast and colorectal surgery. The authors are not aware of any reports focusing on surgical PAs working within the diagnostic setting.

We explored roles and responsibilities that PAs are assigned using their logbooks. We also evaluated feedback from PAs and supervisors from questionnaires and online review meetings. Our analysis gives insight into: 1. PA training in the respective departments, 2. Procedures/services PAs were entrusted with over time, 3. Supervisors and PAs expectations at the commencement of employment, 4. Difficulties encountered and resolutions, 5. Factors influencing integration and PA retention.

Methods

Recruitment and Interview Process

At the start of the project in 10/2021, the WCA agreed funding for nine 12-months fixed term PA roles. Cancer departments in the area were invited to employ PAs and collect data during their first year of employment, to build a business case for continued funding and employment of the PAs by the home trusts. Data collected was qualitative in nature focusing on feedback and perceptions from multiple stakeholders (PAs, senior clinicians, and patients).

After job descriptions and core curriculum elements were agreed, recruitment to six out of the nine PA posts took place from 05/2022 to 05/2023. PAs were employed within urology, and breast and colorectal surgery. At the time of writing, the remaining three PAs were either not appointed or were too soon in post to be included for analysis. All participating departments had no previous history of employing PAs. Four out of the six recruited PAs had worked as a PA in various departments, including the respiratory department, the accident and



emergency department, paediatrics, gastroenterology and in elderly care in rotational posts after their qualifications (for less than 1 year). Two of the urology PAs had significant experience working in this specialty previously.

The project was overseen by the WCA Workforce Lead and two experienced PAs working as project managers who developed metrics for impact assessment and provided guidance to supervisors and appointees.

Data Collection for Impact Assessment

Data was collected by means of introductory and interim review meetings, preemployment questionnaires, work logs and supervisor/MDT satisfaction surveys (see Supplementary File). Appointees met with project managers virtually within three months of the start of their employment, to understand their background and previous experience and to ensure that PAs had adequate support in their respective trusts and departments. Following the introductory meeting, appointees completed a pre-employment questionnaire and work logs at three and six months of their employment. Project managers undertook further virtual review meetings six months into the PAs employment, but interim meetings were arranged whenever requested or necessary following the evaluation of questionnaires or worklogs. The information collected on feedback forms was not shared between supervisors and PAs, however interventions to mediate between the parties were undertaken to ensure mutual expectations were fulfilled.

Additionally to the evaluation of impact metrics, patient feedback forms were studied to determine the impact, the safety and patient acceptance of individual PAs. PAs were also asked to provide information about any patient complaints, if applicable.

Support of Supervisors and Appointees

Prior to recruitment, supervisors were given opportunities to speak to experienced PAs employed in their respective specialties to understand the role and scope of PAs. Once a PA was employed, supervisors were provided with a supporting document outlining information including required support and CPD requirements for the PAs. Throughout the project, supervisors contacted the project managers to review job descriptions, disseminate job adverts, participate in interview panels and discuss timetables. Appointees contacted the project managers for support and were also connected with experienced PAs within their respective specialities in the form of a buddy scheme or an online chat group.



Ethical Considerations

The Wessex Cancer Alliance approved the study. Participation of all Physician Associates described in this study was voluntary.

Results

Training of PAs in Urology and Breast and Colorectal Surgery – Evaluation of Work Logs

1. Urology PAs

Urology departments across the WCA catchment employed three PAs; Two had previous experience working as a PA within urology for a minimum of one year, one PA was newly qualified. All urology departments aimed for their PA to acquire proficiency to perform flexible cystoscopy and prostate biopsies.

The PAs with previous urology experience worked under a named supervisor in an autonomous manner undertaking these procedures within six months of employment. By this time, one experienced PA also ran independent Botox injection clinics and facilitated moving the procedure out of theatre into clinic with associated cost reduction. The PA also ran one-stop clinics for patients presenting with haematuria. Furthermore, the PA improved preoperative preparation by producing imaging folders for surgeons and was involved in improved discharge planning.

A 'fast track pathway' was developed by a PA in another trust which involved triaging, initiating investigations and undertaking consultations before presenting the patient to the MDT. The PA also undertook a quality improvement audit on patient experience after prostate biopsies.

Additionally, PAs triaged 2WW referrals, participated in MDT meetings, consultant-led ward rounds and undertook urology telephone clinics.

Unsurprisingly, the PAs with previous experience in urology worked autonomously considerably quicker than the PA with no previous experience. Moreover, geographical remoteness and a resulting lower caseload of the trust was negatively associated with acquiring competency. Irrespectively, the PA and supervisor at this trust had agreed on a 100-patient sign-off target until reaching competency for flexible cystoscopy. This is according to guidelines published by the British Association of Urological Surgeons [BAUS] (2017) with the PA having completed one third of required sign-offs by six months. The PA was trained in a similar manner for transperineal prostate biopsies by this time.

2. Breast PAs

The Alliance funded two PAs in Breast Units in Wessex. Despite starting with similar experience level and similar agreed training goals, development of the



PAs within the breast units differed. Both PAs had worked a minimum of one year experience in alternative specialties but had no experience in Breast Surgery. Supervisors and PAs at both trusts had agreed that training should aim towards undertaking autonomous 2WW clinics.

In the first trust, the agreed training scheme involved seeing 30 patients of different cohorts (Benign, Breast lesions of Uncertain Malignant Potential (B3 diagnosis), Ductal Carcinoma in Situ and Invasive Cancer) under supervision before seeing 20 patients independently with immediate consultant feedback following which competency was signed off by the consultant.

At the six months mark, the PA was autonomous in undertaking 2WW clinics seeing sometimes more than 40 patients per week following benign and borderline imaging. The PA was also progressing their training to provide clinics informing patients of results with suspicious imaging - under supervision - seeing approximately eight patients per week with the plan to see patients independently thereafter.

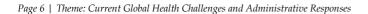
Additionally, the PA undertook patient-initiated follow-up (PIFU) and end of treatment clinics at a rate of approximately five patients per week. Plans to establish endocrine clinics advising patients on the treatment of side effects and discussing extension of anti-hormonal treatment were still pending due to the PA's lack of prescribing rights. At the time of writing endocrine clinics were still run by consultants. Mid-way into the PA's training, the team was planning a business case for continuation of the post as a shared post between the breast and oncology department.

Following a protracted recruitment period for unclear reasons, a PA employed elsewhere experienced delays in receiving a timetable as well as a supervisor change within the first months of her employment. The PA competed for training opportunities within the department with several advanced healthcare professionals who had a similar work remit and training requirement. At the six months mark, the PA was able to undertake 2WW clinics seeing a maximum of eight patients per week under supervision. Additionally, the PA helped with preoperative assessments, post-operative wound checks, drain removals and assisted in the operating theatre in times when trainee doctors were not available.

Despite a slower role development and some difficulty in establishing the role, applications for continued funding was embarked upon 9 months into the post.

3. Colorectal PA

One PA was employed in a colorectal unit in the WCA. The PA had experience of working as a PA in alternative specialties for one year but had no experience in colorectal surgery.





Training aimed at competency in running 2WW lower GI clinics as well as establishing new services for patients, including pre-habilitation clinics (perioperative medicine) for colorectal cancer patients in collaboration with the anaesthetics team.

Initially, a timetable was generated which spanned the service including ward work, consultant clinic sessions as well as procedural exposure in theatre and endoscopy. Shadowing progressed in line with the PAs interests and once competency was agreed, parallel clinics were set up with access to supervision and support, if required. The PA was also specifically trained in telephone assessments using an e-Learning for health module.

By six months of employment the PA increased the capacity for first appointments following 2WW referrals via face-to-face as well as telephone clinics by approximately 20 patients per week, helped with triaging and managing the advice and guidance service. The department reported a reduction in time from referral to first appointment. By this time the PA had also written and submitted a business case to apply for funding for a full-time post to support a prehabilitation service across specialties.

In addition to this, the PA also performed a clinical audit and the colorectal team was planning to establish a PA led proctoscopy service in the near future. Outside the clinical remit, the PA was working as a learning disability representative for the department.

4. Comparison of PA integration across the specialties

The integration of the PAs in urology was the easiest to achieve due to the previous training of two PAs at another hospital allowing for the transfer of skills and knowledge to the departments. Furthermore, the PAs benefited from a clear training pathway provided by the BAUS guidelines (The British Association of Urological Surgeons [BAUS], 2017). While nationwide protocols are not developed, local protocols and straightforward processes to be followed for patients attending 2WW clinics aided integration of Breast PAs. The colorectal PA's work was least protocol-driven allowing a greater degree of flexibility for future role definition.

Expectations and Reservations of PAs and Supervisors at the Beginning of the Employment

Five out of six PAs completed pre-employment questionnaires. Introductory interviews took place with all appointees.

PA's reasons for applying to the positions were the interest in the respective specialty, career development ("new challenge", "learning opportunity", "gain



new skills") and personal reasons ("family relocations", "proximity to home", "closer to family").

PAs and their supervisors were asked about reservations and worries at the beginning of their contract. PAs mentioned concerns mostly surrounding the topic of role acceptance by the MDT and career progression. They listed worries about "their role not being understood", "working in a trust or specialty that is unfamiliar with the role", "not being used to the full potential" and "not receiving sufficient level of support to progress".

Supervisors stated reservations about PAs ability to prescribe and request ionising radiation, the PA "adding to the workload of other team members", "PA salary at a band 7" without prescribing rights and no regulation and "provision of a varied enough time-table to maintain interest and promote progression".

Difficulties Encountered by PAs Impacting Their Role Development Once PAs were employed in their respective departments, PAs fed back regarding factors that were negatively impacting their work.

Due to the lack of regulation PAs were unable to request ionising radiation or prescribe medication. PAs therefore recommended relevant imaging, which was requested by colleagues within the department or as for the PAs working in breast surgery, patients were only seen by the PAs after mammograms had taken place eliminating the need for ionising imaging requests.

Two PAs working in urology and breast surgery, also reported difficulties in gaining permission to request imaging not involving radiation, such as MRI and ultrasound scans.

The lack of prescribing rights particularly impacted a PA who had to regularly arrange medicines for bowel evacuation. To help navigate this problem, the PA developed a proforma to gain necessary prescriptions from their supervisor.

Delays in receiving a work timetable and competition for training opportunities with other advanced practitioners slowed down competency development for one PA which also impacted satisfaction in the role with time. It was felt that reason for preference of non-PA practitioners was likely due to these practitioners being able to request imaging and the permanency of their positions as opposed to the initial fixed-term nature of the PA's contract.

One PA mentioned discrepancies in views of supervisors and senior medical doctors versus other healthcare professionals at which level patient consultations should be managed by the PA. A PA also mentioned that acceptance of PAs in the trust had suffered following national discussions around the profession led by the medical profession.



Integration of PAs into the Cancer Teams

PAs were generally well received by permanent members of the teams as evidenced by comments referring to the PA as a "super addition to the team!" or the PA being "invaluable in both emergency and elective service delivery".

The ability of PAs was described to "exceed all of (...) expectations", "rise to every challenge" and it was noted that the "pre-existing experience and knowledge" (was found to be) "impressive".

PAs were described as "true team players", "hard working", "very quick to learn and highly motivated to expand (the) role."

One supervisor concluded that "PAs are (...) good members of the team who have the interests of the patient primarily at their core" and "every department would benefit from having one". Three supervisors were at the time of writing already in the process of attracting or had secured funding to continue employment of the PAs at the end of their 12 months contract.

Again, supervisors reiterated PAs limitations regarding arranging ionising radiation and the prescribing right that was added workload to others being paid at the same grade.

Impact on Patients, Staff Members and the Department

Three supervisors commented on reduced waiting times for patients. Patients also benefited from the development of new clinics which improved and diversified services offered to patients. In one case a supervisor remarked that patients are sometimes unclear about the distinction of the PA and a resident doctor.

Four PAs with face-to-face contact during autonomously run clinic appointments returned patient feedback proformas showing that all participating patients were very satisfied with their consultations.

Supervisors stated that the PA had "alleviated the pressures on the team" freeing up consultant time for more complex patients and activities. One supervisor mentioned that the PA worked "in many ways" at the "level of a midlevel (...) trainee". Cost savings were thought to have been achieved through reducing use of locums, aiding changes on how and where a patient service was delivered (theatre versus clinic rooms), expediting discharges and improving day-case rates.

One supervisor also added that the PA had supported the inpatient service during periods of recent industrial action.



Limitations of the Study

Due to the low number of PAs, this study can provide ideas of how PAs can be utilised in the departments of urology, and breast and colorectal surgery based on feedback by line-managers and PAs. Further studies are needed to provide quantitative data measuring the impacts of PAs in the longer term.

Recruitment of PAs into their posts was hampered by the small recruitment pool (particularly for a remote hospital), low numbers of applicants to fixed term contracts, a cumbersome administrative application process and the lack of engagement of prospective supervisors suggesting second thoughts or reservations about embarking on employing a PA.

Once interviews took place, four out of six supervisors completed the preemployment questionnaires. Supervisors commented on the quality of their applicants being generally very good, while numbers of applications received was low with between 1 and 4 per post.

The assessment of PAs was undertaken by PAs who were employees of the entity providing the funding for the posts. Potential biases influencing assessor's subjectivity in analysing the data as well as in PAs and supervisors providing feedback have to be carefully considered.

Discussion

Our study demonstrates that PAs can be beneficial to cancer teams if guided by a senior supervisor and supported appropriately by the multidisciplinary team.

PAs are still a young profession and their number comes to around 4000 PAs in primary and secondary care in the UK (10/2023, personal communication with the Faculty of Physician Associates). In contrast, NHS workforce statistics state that in the same year around 142,000 medical doctors and 343,000 nurses were registered (NHS Digital, 2023). Contact with PAs and knowledge about their capabilities is therefore still limited. Nevertheless, opinions spread via media are often formed based on isolated events with insufficient context, brief contacts or even second-hand information (Rimmer, 2023).

Due to the relatively small recruitment pool of this emerging profession, employment of specialty trained PAs is not yet the norm (Ritsema & Navarro-Reynolds, 2023). Despite significant differences in level of training and mode of practice, the start of a PA's career is most similar to that of medical foundation doctor, who rotates into a specialty with theoretical knowledge, but little previous practical experience. However, while medical doctors eventually no longer require supervision, PAs reach a level of autonomy, but not independence with time in mutual agreement and partnership with their senior usually permanent medically trained doctor.



On a departmental level, the expansion of the PA's generalist education and the mixed skill set within a surgical specialty can be viewed as a wise investment as the training of this permanent member of staff can be adapted to fit around the needs of the individual department - a finding which is also highlighted in a study by Ritsema and Navarro-Reynolds (2023). The present study suggests that there is a value in developing PAs and , if managed accordingly, PA job roles are complementary, but not competing with those of surgical doctors or their training.

In this study we found that the main stay of PAs training aimed at performing mid-level, high throughput, everyday tasks. As some training and experience is required to undertake these tasks, most departments already reply on advanced practitioners allowing surgical doctors to focus on more complex patients and acute presentations. Surgical trainees may take part in these routine activities, while they cannot be relied upon for all year round service provision due to the rotational nature of their jobs and their involvement in managing acute presentations during on-call days. One example is the breast clinics that are often run by advanced nurse practitioners and more recently also PAs; Hence PAs do not infer with surgical training. On the contrary, they increase the time seniors can spend on other tasks including surgical doctor training and can with time and experience even help delivering training in their well-defined areas of expertise. Training of PAs with the aim to undertake advanced surgical procedures was not undertaken by the PAs involved in this study.

The outcomes reported here contrast the results of the recent survey of surgical trainees which reported a negative impact on their training because of the presence of PAs (The Association of Surgeons in Training [ASiT], 2024). The outcome of the survey is concerning and requires urgent investigations to quantitatively assess how surgical training has been impacted by the introduction of PAs and how doctors' learning experience can be improved by evaluating the way training is delivered.

Our study did not aim to collect feedback from doctors in training due to the rotational nature of their posts and the circumstance that the PAs did not work closely with these doctors.

Feedback by permanent clinicians, including consultants and senior medical staff, however was positive. This was further evidenced by applications being submitted for permanent PA posts. This indicates that the dissatisfaction with PAs is not a general problem throughout the teams but lies in the working relationships between PAs and non-permanent clinicians.

Likewise, feedback collected from patients demonstrated that patients felt well cared for by the PAs. This is in keeping with a study by Drennan et al. (2019) showing that patients have accepted the profession much more readily than



other healthcare professionals including medical doctors. This is likely due to the patients having been in contact with non-medical healthcare professionals, such as advanced nurse practitioners and clinical pharmacists for many years.

Roberts et al. (2022) suggest that PAs offer some stability to the healthcare workforce. According to this publication, PAs stay in their first job for an average of 3 years which is longer than that of other professions, including nurses and resident doctors who often change jobs as part of their rotational training (Roberts et al., 2022). Further studies are required once increasing numbers of PAs have settled into their posts in more significant numbers, to allow us to predict the PA's behaviours in staying in one job over the course of a working life.

We have shown that supervision and a structured training of PAs at the beginning of their careers within their department is key to PAs' integration into teams. The report also shows that the lack of supervision or the lack of training with clearly defined outcomes, delays integration and negatively affects retention.

At present PAs who join specialties, lack the "hierarchical" support system of more experienced PAs to aid or guide their training and are hence dependent on training being delivered in partnership with medical doctors, nurses and advanced health care professionals. This circumstance might contribute to line-managers, generally senior doctors, weighing up their required involvement and commitment to PA training within the time available to them.

As this report suggests, successful integration of PAs into the cancer teams can, however, be achieved safely and in a relatively short time, if they are supported by a committed supervisor with clear training goals and a team committed to training the PA for long-term benefit. Additionally, the formulation of training guidelines, such as the ones provided for flexible cystoscopy by BAUS can help to overcome reservations by future PA trainers (The British Association of Urological Surgeons [BAUS], 2017).

In return and as stated previously, established PAs can relieve pressures on senior clinicians' workload by supporting the training of members of staff joining the department in the future, helping with the induction of resident doctors and aiding continuity of care to patients (Drennan et al., 2019). This study shows that PAs are particularly useful when employed at staffing bottle necks such as the 2WW diagnostic pathways.

Ultimately and as suggested in this study, PAs must be allowed to exist as a profession with roles of their own that do not conflict with medical colleagues to ensure their retention in the teams. We recommend that care must be taken that these postgraduates are provided with a sufficiently challenging and varied



work environment (Carey & Newton, 2023). This is in keeping with Roberts et al. (2022) who identified the presence of 'learning opportunities' as one of the main factors influencing PA retention.

Having demonstrated the positive impact of the PAs involved in this study which has exceeded clinical duties, it remains to be shown how PAs can be retained within teams in the longer term. We believe that workforce pressures call for a renewal of the healthcare system based on partnership and collaboration between all advanced healthcare professionals. We propose a model that respects boundaries of academic qualifications but allows professional mobility by valuing experience, individual capabilities and rewarding the willingness to undertake further education through specifically designed and accredited courses.

Conclusion

This study demonstrates that PAs should be part of the workforce solution to relieve pressures on cancer pathways. PAs can safely engage in several specialist procedures and provide clinical services as early as six months after their appointment. We found that they also take on tasks of a service-shaping nature, which exceeds their clinical remit.

We highlight the need for initial investment in training by a committed linemanager – usually a senior doctor - towards clearly defined goals and demonstrates that the lack of it can impact retention.

We found that acceptance of the role by the multidisciplinary team was much less of an issue than anticipated. Some of the difficulties PAs faced were due to the lack of prescribing and arranging ionising radiation. We expect these skills will be reviewed and appropriate processes put in place for PAs to develop these competencies following regulation of Physician Associates by the General Medical Council (GMC).

In view of workforce pressures and considering staff retainment in the future, we propose a renewal of the healthcare system based on partnership and collaboration between all healthcare professionals that allows professional progression whilst respecting boundaries of academic qualifications.

A further, longer-termed analysis is needed to assess the impact of PAs using quantitative measures once additional PAs have settled into the cancer workforce.

Physician Assistants in the US are an integral and well-accepted part of most medical and surgical teams for the past 60 years (Ogunfiditimi, 2023). The authors of this article hope that PAs in the UK will follow the same trajectory and



exposure of PAs to primary and secondary care teams will improve acceptance of the profession.

Declaration of Conflicting Interest

No conflict of interest to declare.

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Authors' Contributions

Both authors contributed to the study's conception and design, data acquisition, and data analysis, ST wrote the first draft of the manuscript, revised the final draft, and gave final approval of the version to be published.

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Data Availability Statement

The dataset generated and analyzed during the current study are available from the corresponding author upon reasonable request.

Declaration of the Use of AI in Scientific Writing

There is nothing to declare.

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